Where W is OH, the formula represents a "carboxylic acid." In general, where the oxygen atom of the above formula is replaced by sulfur, the formula represents a "thiolcarbonyl" group. Where W is a S-alkyl, the formula represents a "thiolester." Where W is SH, the formula represents a "thiolcarboxylic acid." On the other hand, where W is alkyl, the above formula represents a "ketone" group. Where W is hydrogen, the above formula represents an "aldehyde" group.

[0673] As used herein, the term "heteroaromatic" or "heteroaryl" means a monocyclic or polycyclic heteroaromatic ring (or radical thereof) comprising carbon atom ring members and one or more heteroatom ring members (such as, for example, oxygen, sulfur or nitrogen). Typically, the heteroaromatic ring has from 5 to about 14 ring members in which at least 1 ring member is a heteroatom selected from oxygen, sulfur, and nitrogen. In another embodiment, the heteroaromatic ring is a 5 or 6 membered ring and may contain from 1 to about 4 heteroatoms. In another embodiment, the heteroaromatic ring system has a 7 to 14 ring members and may contain from 1 to about 7 heteroatoms. Representative heteroaryls include pyridyl, furyl, thienyl, pyrrolyl, oxazolyl, imidazolyl, indolizinyl, thiazolyl, isoxazolyl, pyrazolyl, isothiazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, triazolyl, pyridinyl, thiadiazolyl, pyrazinyl, quinolyl, isoquinolyl, indazolyl, benzoxazolyl, benzofuryl, benzothiazolyl, indolizinyl, imidazopyridinyl, isothiazolyl, tetrazolyl, benzimidazolyl, benzoxazolyl, benzothiazolyl, benzothiadiazolyl, benzoxadiazolyl, carbazolyl, indolyl, tetrahydroindolyl, azaindolyl, imidazopyridyl, qunizaolinyl, purinyl, pyrrolo[2,3]pyrimidyl, pyrazolo[3,4]pyrimidyl, benzo(b)thienyl, and the like. These heteroaryl groups may be optionally substituted with one or more substituents.

[0674] The term "substituted" is contemplated to include all permissible substituents of organic compounds, "permissible" being in the context of the chemical rules of valence known to those of ordinary skill in the art. In some cases, "substituted" may generally refer to replacement of a hydrogen with a substituent as described herein. However, "substituted," as used herein, does not encompass replacement and/or alteration of a key functional group by which a molecule is identified, e.g., such that the "substituted" functional group becomes, through substitution, a different functional group. For example, a "substituted phenyl" must still comprise the phenyl moiety and cannot be modified by substitution, in this definition, to become, e.g., a heteroaryl group such as pyridine. In a broad aspect, the permissible substituents include acyclic and cyclic, branched and unbranched, carbocyclic and heterocyclic, aromatic and nonaromatic substituents of organic compounds. Illustrative substituents include, for example, those described herein. The permissible substituents can be one or more and the same or different for appropriate organic compounds. For purposes of this disclosure, the heteroatoms such as nitrogen may have hydrogen substituents and/or any permissible substituents of organic compounds described herein which satisfy the valencies of the heteroatoms. This disclosure is not intended to be limited in any manner by the permissible substituents of organic compounds.

[0675] Examples of substituents include, but are not limited to, alkyl, aryl, aralkyl, cyclic alkyl, heterocycloalkyl, hydroxy, alkoxy, aryloxy, perhaloalkoxy, aralkoxy, heteroaryl, heteroaryloxy, heteroarylalkyl, heteroaralkoxy, azido, amino, halogen, alkylthio, oxo, acyl, acylalkyl, carboxy esters, carboxyl, carboxamido, nitro, acyloxy, aminoalkyl, alkylaminoaryl, alkylaryl, alkylaminoalkyl, alkoxyaryl, arylamino, aralkylamino, alkylsulfonyl, carboxamidoalkylaryl, carboxamidoaryl, hydroxyalkyl, haloalkyl, alkylaminoalkylcarboxy, aminocarboxamidoalkyl, alkoxyalkyl, perhaloalkyl, arylalkyloxyalkyl, and the like.

1. A system, comprising:

a radiation source configured to emit radiation having one or more wavelengths within an electromagnetic radiation spectrum; and

an emissive species;

wherein a first portion of the electromagnetic radiation spectrum comprises radiation having a wavelength between 425 nm and 475 nm, wherein a second portion of the electromagnetic radiation spectrum comprises radiation having a wavelength between 525 nm and 725 nm, and wherein the radiation source is configured to produce a wavelength of electromagnetic radiation that interacts with the emissive species such that the emissive species produces a detectable signal having one or more delayed emissions of greater than or equal to 10 nanoseconds.

2. A system, comprising:

a source of electromagnetic radiation having a plurality of wavelengths; and

an emissive species;

wherein the emissive species is configured to produce a detectable signal having one or more delayed emissions of greater than or equal to 10 nanoseconds, and wherein the plurality of wavelengths spans a wavelength range greater than or equal to 50 nm.

3. A system as in claim **1**, wherein the emissive species is configured to produce a detectable steady-state emission.

4. A system as in claim **1**, further comprising a second emissive species, wherein the second emissive species is configured to produce a steady-state emission.

5. A system as in claim **1**, wherein the electromagnetic radiation produced by the source is unadulterated prior to exposure to the emissive species.

6. A system as in claim **1**, wherein the system does not comprise a light filter positioned between the source and the emissive species.

7. A system as in claim **1**, wherein the source is a component of a consumer electronic device.

8. A system as in claim **1**, wherein the consumer electronic device is a smartphone, tablet, computer, digital camera, or the like.

9. A system, comprising:

an excitation component configured to produce a plurality of wavelengths of electromagnetic radiation, wherein:

the excitation component is configured to excite a first emissive species such that the first emissive species produces a detectable steady-state photon emission signal; the excitation component is configured to excite a second emissive species such that the second emissive species produces a detectable non-steady-state photon emission signal; and

a sensor configured to detect at least a portion of the detectable steady-state photon emission signal and at least a portion of the detectable non-steady-state emission signal.

10-12. (canceled)